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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,144	12/31/2003	Allan Robert Knoll	1014-SP230	7932
34456	7590	06/13/2005	EXAMINER	
TOLER & LARSON & ABEL L.L.P. 5000 PLAZA ON THE LAKE STE 265 AUSTIN, TX 78746			NORRIS, JEREMY C	
			ART UNIT	PAPER NUMBER
			2841	

DATE MAILED: 06/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/750,144	Applicant(s) KNOLL ET AL.	
	Examiner Jeremy C. Norris	Art Unit 2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) 33-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/25/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-32, drawn to a superconducting article, classified in class 174, subclass 125.1.
- II. Claims 33-42, drawn to a method of making a superconducting article , classified in class 29, subclass 599.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the article of the invention of group I could be formed by a selective deposition method as opposed to the photolithographic method claimed in the invention of Group II.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Jeffery Abel on 2 June 2005 a provisional election was made with traverse to prosecute the invention of group I, claims 1-32. Affirmation of this election must be made by applicant in replying to this Office action. Claims 33-42 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

The drawings are objected to because the sectional views are not properly cross-hatched (see MPEP 608.02). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after

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the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology

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often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because of the use of the phrase "is disclosed". Correction is required. See MPEP § 608.01(b). Examiner suggest simply deleting the aforementioned phrase.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-20 and 23-30 are rejected under 35 U.S.C. 102(b) as being anticipated by US 6,133,814 (Okada).

Okada discloses, referring to figures 1 & 2, a superconducting article, comprising; a substrate (3) a plurality of superconductor strips (1, 2) overlying the substrate, the superconductor strips comprising first and second superconductor strips adjacent each other; and at least one conductive bridge (6) electrically coupling at least the first and

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second conductive strips with each other, wherein the substrate has a dimension ratio of not less than about 10 (see col. 13, lines 35-45 and col. 10, line 65 – col. 11, line 5) [claim 1], wherein the superconductor strips are generally parallel to each other (see fig. 2) [claim 2], wherein the superconductor strips are spaced apart from each other by an average gap width of at least 1 μm (see col. 11, lines 40-50) [claim 3], wherein said average gap width is not less than about 5 μm (see col. 11, lines 40-50) [claim 4], wherein the superconductor strips are spaced apart from each other by a substantially constant gap (see col. 11, lines 40-50) [claim 5], wherein the first and the second superconductor strips have an average width of at least 5 μm (see col. 13, lines 40-45) [claim 6], wherein the first and second superconductor strips have substantially the same width [claim 7], wherein the conductive strips are generally co-planar with each other, forming a superconductor layer [claim 8], wherein the at least one conductive bridge comprises a plurality of conductive bridges (see figure 2), comprised of superconductor material (see col. 11, lines 35-50) [claim 12], wherein the superconductive strips and plurality of conductive bridges substantially coplanar, formed from a patterned layer of superconductive material [claim 13], wherein the conductive bridges are spaced apart generally periodically along a length of the substrate (see figure (7, see figure 9) [claim 14], wherein the article comprises a minimum of one bridge per 100mm of substrate (see col. 11, lines 15-25) [claims 15, 16, 17, 18], wherein the conductive bridges are spaced apart generally periodically along a length of the substrate (see col. 11, lines 15-25), further comprising at least one conductive shunt layer (4) overlying the superconductor layer [claim 20], wherein the superconductor

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strips are comprised of a high temperature superconductor (see col. 4, lines 30-45), wherein the high temperature superconductor comprises $\text{REBa}_2\text{Cu}_3\text{O}_{7-x}$, wherein RE is a rare earth element (see col. 6, lines 45-55) [claim 24], wherein the superconductor material comprises $\text{YBa}_2\text{Cu}_3\text{O}_7$ (see col. 6, lines 50-55) [claim 25], wherein the substrate has a dimension ratio of not less than 10^2 (see col. 10, line 65 – col. 11, line 5) [claim 26], wherein the substrate has a dimension ratio of not less than 10^3 (see col. 10, line 65 – col. 11, line 5) [claim 27], wherein the article is in the form of a superconducting tape (see col. 4, lines 55-60) [claim 28], wherein the substrate, the superconductive strips, and the conductive bridges form a superconductive tape, the article comprising a coil having a plurality of superconductive tapes (see col. 4, lines 45-55) [claim 29], wherein the article is a power transformer, the power transformer comprising at least a primary winding and a secondary winding, wherein at least one of the primary winding and secondary winding comprises a wound coil of superconductive tape, the superconductive tape comprising said substrate, said superconductor strips, and said conductive bridges (see col. 5, lines 25-35) [claim 30], wherein the article is a rotating machine, the rotating machine comprising at least one winding, wherein the at least one winding comprises a superconductive tape formed of said substrate, said superconductor strips, and said conductive bridges (see col. 5, lines 25-35) [claim 31], wherein the rotating machine is a power generator or motor (see col. 5, lines 25-35) [claim 32].

Regarding claims 9-11, these claims cite process limitations in a device claim and thus are only considered to the extent to which the process impacts the structure of

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the device. Moreover, it is well settled that even though product by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product by process claim is the same as or obvious from a product of the prior art, the claims unpatentable even though the prior product was made by a different process. *In re Thorpe*, 77 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir 1985).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada in view of US 6,436,317 (Malozemoff).

Okada discloses the claimed invention as described above except Okada does not specifically disclose a biaxially textured layer, over which the superconductor layer is provided [claim 21]. However, Malozemoff teaches forming a bi-axially textured layer on a substrate to which a superconductor is applied. Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use the bi-axially textured layer taught by Malozemoff in the invention of Okada. The motivation for doing so would have been to strengthen the device over the length of the device to avoid weak links in the superconducting path, that could lead to reduced critical currents and weaker superconducting performance in magnetic fields (see Malozemoff col. 8, lines 50-55). Regarding claim 22, the limitation "wherein the biaxially textured layer comprises an IBAD layer" is a process limitation a device claim and thus is only considered to the extent that said process impacts the structure of the device. Moreover, it is well settled that even though product by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product by process claim is the same as or obvious from a product of the

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prior art, the claims unpatentable even though the prior product was mad by a different process. *In re Thorpe*, 77 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir 1985).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following documents disclose superconducting articles:

US 2004/0020683 A1 Perez et al.,

US 6,576,843 B1 Ashworth,

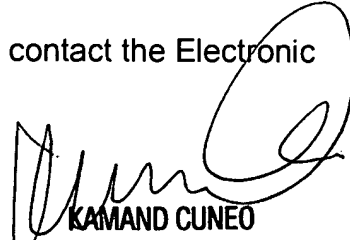
US 6,794,970 B2 Reis et al..

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy C. Norris whose telephone number is 571-272-1932. The examiner can normally be reached on Monday - Friday, 9:30 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JCSN


KAMAND CUNEO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800